

Set 1:

- a) Prepare an E-R Model (E-R Diagram) for Road-way Travels System (i.e., Bus Ticket Reservation System) and Explain the workflow of E-R Model in detail.
- b) Create an **EMPLOYEE** table with columns such as EmployeeID, FirstName, LastName, Salary, Hobbies;
 - i) Add a new column Department of type VARCHAR(100):
 - ii) Rename the LastName column to Surname
 - iii) Increase the length of FirstName column to 100 characters;
 - iv) Drop the Department column

Set 2:

- a) Prepare a Relational Model (Tables) for Road-way Travels System (i.e., Bus Ticket Reservation System) by Creating below tables.
- b) Explain and implement all the Normal Forms using tables of Road-way Travels System (i.e., Bus Ticket Reservation System)

Set 3:

- a) CREATE TABLE Orders with columns such as OrderID, CustomerID, OrderDate, TotalAmount);
CREATE TABLE Customers with columns such as (CustomerID, CustomerName, City);
Write a query to retrieve the total number of orders placed by each customer who has placed more than 1 order. Include the customer's name and the count of orders, sorted by the count of orders in descending order.
- b) Explain and implement 1 NF, 2 NF, 3NF Normal Forms using Road-way Travels System (i.e., Bus Ticket Reservation System) tables.

Set4:

- a) Insert a new record into the Employees table with the following details:
EmployeeID: 101 FirstName: 'Alice' LastName: 'Johnson' Salary: 60000.00
- b) Update the salary of employee with EmployeeID 101 to 65000.00
- c) Delete the employee record with EmployeeID 101 from the Employees table.
- d) Implement left and right inner join using examples of your own.

Set5:

- a) Explain the concept of Views. Write down the syntax to create a view table from an existing table with an example of your choice.
Now create a view table called “route_view” and store the details of required information “bus details” table.
- b) Assume you have table **employee** (employee_id, employee_name, department_id, salary, hire_date). Implement all the aggregate functions on this table.